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AUTHOR McDonald, Geraldine
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ABSTRACT

In this study an observation schedule was developed and used to compare activities and behavior of 77 New Zealand children with disabilities who had been mainstreamed into special groups within preschools and play centers and 77 non-disabled peers. The development of the schedule is described, results are given, and advice is offered to practitioners who would like to implement the schedule in their own settings. Primary concerns included assessing the success of the integration process and investigating such areas as interaction with other children, use of speech, willingness to respond when spoken to, and gender differences. The observations showed clear differences between the two groups of children, both in the attention they received from adults and in the nature of their activity and speech. These differences were of degree rather than kind. (PB)

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Children Observed

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Geraldine McDonald

Joining In: Children Observed

Geraldine McDonald

with the assistance of
Sashi Meanger

A study of the mainstreaming
of children with educational handicaps
into kindergartens and playcentres

Studies in Education, No. 47

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Introduction

The study reported in this booklet is part of a larger study of children in early childhood centres containing integrated (or mainstreamed) special groups of children. In the study, involving 38 kindergartens and 1 playcentre, an observation schedule was used to compare the activities and behaviour of children in the special groups with other children attending the same centre. Information was collected on 77 children with varied disabilities from the special groups and 77 children from the ordinary or main rolls. The development of the schedule is described in this report, the results are given and advice is provided for teachers and others who would like to use the schedule for their own purposes.

The special groups contained children of varied disability classified for the purposes of the study into four categories of functional disability – physical, intellectual, social and emotional.

The observations were carried out to determine the extent to which the policy of integration was working for the special group children, and also to investigate those matters, such as interaction with other children, use of speech and willingness to respond when spoken to, that were found during the preliminary work in the study to be of interest and concern to kindergarten teachers, playcentre supervisors and parents of special group children. The report also provides information on some gender differences.

Although the observation schedule was developed for a specific purpose it has wider application. It can, for example, be used by teachers and supervisors to provide systematic information on aspects of children's activities. It can also be used by teachers in training to learn more about children, with or without special educational needs, and to study what children do in particular preschool activities or settings.

Bridget

In the first booklet in this series there was a description of a small girl called Bridget who, although she showed considerable powers of understanding, had trouble in speaking.[1] Sometimes she appeared to be trying to speak but nothing emerged. At other times she managed to produce simple utterances. Also her motor co-ordination was less than might have been expected of a child of nearly five.

No doubt because of her problem in speaking to others she seemed to lack confidence in social situations. She was of above average intelligence, judging by the speed with which she responded to requests and her mastery of puzzles and formboards.

Bridget was observed over the course of a morning at kindergarten. The first observation was missed because she had not yet come. She was first observed at 9.35 a.m. shortly after she had arrived. She was in the family corner standing alone, simply gazing at other children at play. She said nothing. At 10.00 a.m. she was with a small group of children and a teacher. They were looking for dandelions in the grass, picking the flowers, and feeding them to the kindergarten guinea pig. Although she did not speak to the other children, Bridget made a comment to herself, 'Got big one', and she spoke to the guinea pig saying, 'Here you are', as she pressed a flower to its mouth.

At 10.30 a.m. all the children were sitting on the mat with the teacher for a group session. Bridget sat near the front, surrounded by other children. She responded accurately with all the appropriate hand actions during finger play but only mouthed replies when the teacher sought verbal responses from the group. By 11.00 a.m.

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1. The two case studies and other descriptions of children in this booklet are based on observations of actual children but, in order to preserve anonymity, details have been altered in the accounts. The children described are typical of other children with similar difficulties who were observed during the study.

she had joined a small group of children who were looking at books with a teacher. The teacher asked questions about the story she was reading and the other children answered. Bridget did not speak but watched the others intently as they spoke. At 11.30 a.m. Bridget was sitting by herself playing with formboards and jigsaws. When another child appeared and sat down at the table Bridget got up from her chair and left.

This information about Bridget's morning was collected by an observer using a structured observation schedule. Bridget's ways of learning were assessed by a second observer who made running records of episodes of her behaviour during the morning and also filled in a Learning Event Checklist. Bridget appeared to be learning through observation of other children, by responding to an adult's instructions (as, for example, in the finger play session with the other children on the mat) and through interaction with objects, as shown, for example, by her behaviour with the formboards and jigsaws. Comments from the running record showed that she 'stands and gazes', 'says very little' and 'seems withdrawn when with groups of children'. However, her comprehension of language showed in her ready, but non-verbal, response to any instruction that the teachers gave.

Sue, Bridget's mother, said that, at three years, Bridget still wasn't saying anything. Sue had been a nurse and recognized Bridget's difficulty. She said that it had made her feel helpless. Bridget had had hearing tests but there appeared to be no problem there. When Sue was attending ante-natal classes with a second pregnancy she met a speech therapist and took the opportunity to talk to her about Bridget. It was the speech therapist who got Bridget into kindergarten. Bridget was later seen by a psychologist. Sue did not know that there was a scheme to integrate children with educational handicaps into preschools until Bridget went to a kindergarten which was part of this scheme.

To bring Bridget to kindergarten Sue had to drive for half an hour. She said that twice a week was really all that she could manage. She had younger twins, whom she had to attend to first and then get ready for the trip to town. In addition to going to kindergarten, Bridget received help from a speech therapist and went to riding for the disabled.

When Bridget first went to kindergarten Sue attended with her for two or three sessions. She commented that her daughter had

'needed a lot of motivation to do things at kindergarten'. Finally, Sue explained to her, 'You're allowed to do what you want at kindergarten', and after that Bridget was all right.

Sue helped at kindergarten once a term. She also belonged to a parent support group and, through this, had got to know the mothers of the children who had difficulties. The special group teacher kept her well informed about Bridget's progress and Sue could ring up any time she liked if she had any concerns.

Sue believed that the kindergarten had helped her daughter by encouraging her self-confidence. Bridget had become much more assertive: 'She would have been walked over if she had gone to school as she was. Now she's learning to use language as a means of defence.'

According to Sue, Bridget's speech was now quite good at home but when she was under emotional strain she developed a stammer. Although she was growing in confidence at kindergarten, Sue thought she was not as confident there as she was at home. Her behaviour at home was confirmed by the interviewer who glimpsed Bridget under a hedge playing in a relaxed manner with another child while her mother was being interviewed. Sue said that Bridget's best friend had just left kindergarten to go to school and Bridget now didn't want to go to kindergarten because her friend wasn't there.

Sue had nothing but praise for the speech therapist, the special group teacher and the psychologist – all were helpful. People close to you, she added, were inclined to be anxious. Also the head teacher at the kindergarten, she said, knew as much about Bridget as the special group teacher did, and they worked as a team.

Bridget's teachers commented that at first Bridget wouldn't play with other children or interact with them at all. She followed the special group teacher around all morning. But she had improved a great deal; she now mixed with other children and certainly appeared more confident. It was still difficult to understand her because she spoke very little, and when she did, it was not always clear. The special group teacher worked individually with the children in her care and generally took them in turn for a session centred on books. All teachers in the kindergarten understood Bridget's difficulty and all kept a watch that she was included in activities.

When Bridget first entered kindergarten, the special group

teacher used a checklist to help her to decide what area of development she should concentrate on when working with her. She also observed Bridget carefully over several sessions. The psychologist called three times a term and would come at other times if asked. Case conferences were held from time to time to discuss each child's progress.

In the project described in this booklet, the researchers used a variety of strategies to get a detailed picture of Bridget's behaviour and progress. The running record provided descriptions of episodes of Bridget's behaviour observed over a span of time. The Learning Event Checklist showed that she had been observed learning from the kindergarten environment in three different ways. The structured observation gave snapshots of Bridget's behaviour at five points in time over the course of a morning. The interview with her mother gave insight into Bridget's behaviour at home. The teachers reported how Bridget behaved when she was away from home and her mother.

What can we expect from Bridget in the future? She is of normal ability and has already advanced in her language use during her time at kindergarten. The psychologist who is responsible for her placement said that Bridget may speak hesitantly and in a limited fashion for some time to come, but not forever; and that she will be able to cope with school work but may need to be watched in case she needs protection from other children.

Bridget's case shows how an aspect of development – speech – is not an ability separate from social development. We announce ourselves to others through our speech – its content, its tone and its authority. Others criticize if our speech is not 'right'. This may make us self-conscious and prevent us from revealing our true abilities. Bridget was mature enough to know the effect of her silence on others and their reaction to her speech. She experienced frustration when she could not use speech to make others do what she wanted them to. In group settings which made no demands on her speech, and where she could forget herself, she spoke much more competently than when individuals were asking her questions and requiring her to respond.

She was healthy and appealing to look at. Time would resolve many of her difficulties. In the meantime she was receiving the support, help and understanding of her mother and her teachers.

Her mother, who also needed support, got this from a network of teachers, specialists and other parents.

What particular contribution can an early childhood centre make to a child like Bridget whose difficulty lay in speaking but not in comprehending speech?

The kindergarten worked best for Bridget when the teachers included her in group settings where speech arose naturally as a consequence of an activity.

In addition to creating opportunities for learning, kindergartens also pose threats to children like Bridget. At times Bridget was threatened by social pressures to speak. The special group teacher often helped Bridget by answering for her if other children were questioning her. The teacher also set up co-operative play situations with which Bridget was familiar. For example, a small group of children and the teacher sometimes played a simple game in which children took turns throwing dice. Bridget was familiar with this game. In this situation she could use speech to make other children do things – saying 'your turn' to another child.

Starting a conversation is different from responding to the speech of others as each situation creates a different task for the speaker. But both situations involve understanding (intellectual activity), use of the organs of speech (physical activity), feelings about oneself (emotional response) and feelings about others (social response). Bridget was able to use her speech on her own initiative more easily than she could respond verbally to the speech of others.

The teacher of a child with an educational handicap is helping a child to function in a particular environment. This involves understanding the demands of that environment, understanding the child's particular difficulty, understanding the resources for assistance in that environment, and understanding what may be done to assist that particular child. Any goals for intervention for a preschool child with special needs in a mainstream setting should be related to both the child's level of functioning and the functions required to cope in the environment of the early childhood centre.[2] The use of systematic observation is an essential tool in this process.

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2. Lois Bloom and Margaret Lahey, *Language Development and Language Disorders*, New York: John Wiley, 1978, provides a comprehensive study of language problems and intervention strategies.

The Study

In 1973 the Department of Education initiated a scheme in which 'the Director-General of Education could authorize the establishment of a special pre-school group at a kindergarten or playcentre to provide supplementary teaching for a group of educationally handicapped children'. This scheme greatly extended earlier provisions of a similar kind for young children who were deaf. The educationally handicapped group was to be no smaller than three children and no larger than five. A suitably qualified teacher was to be appointed and employed by the Department of Education. The special groups of educationally handicapped children were to operate on three half days a week. The admission of children to the groups was to be controlled through the recommendation of the Psychological Service of the Department of Education, or in the case of deaf children, the adviser on deaf children. Both the Psychological Service and the advisers on deaf children were to have a continuing responsibility to provide guidance to the staff of the preschool centres involved and on the teaching programmes appropriate for each child. There were provisions for Education Boards to contribute towards the cost of transporting children to the special preschool groups. The scheme was intended to integrate or mainstream children with special needs into kindergartens and playcentres.

In 1983 the IYDP Telethon Trust invited NZCER to submit a proposal for a national study of these integrated special groups. NZCER's subsequent application to the Trust set out the purpose of a study as follows:

> To determine what integration is in the special groups and how it is working for individual children.

Methods of Observation

In the developmental stages of this study children with educational handicaps were observed in kindergartens. The principal

investigator asked the teachers involved with the special groups what they believed should be observed. It was decided to use two different methods for observing the children. The first involved a running record and Learning Event Checklist (described in *Joining In: Children and Learning*), and the second was a structured observation schedule. This present account is about the information gathered through the use of the structured observation schedule.

Observation schedules are useful if you want to compare one group of children with another. We wanted to compare the activities and behaviour of the special group children with a sample drawn from the main roll of the preschool the children attended.

Observation schedules are difficult to prepare, difficult to administer, and difficult to interpret unless you happen to be observing the very simplest kinds of behaviour. They do not, as is often believed, eliminate observer bias, that is, the kind of distortion, that results from sources within the observer herself, such as her expectations of the child being observed. Instead they just shift the bias to less apparent aspects, such as the decisions which have to be made about what is to be observed and about whether or not a particular bit of behaviour belongs in one category or another. Bias is built into the observation instrument rather than remaining in the eye of the observer. In addition, there are considerable difficulties in achieving satisfactory levels of agreement between different observers even after training.[3]

There are particular problems with observations of children's language. The precise function of a child's utterance generally depends for its interpretation on the context and may be hard to determine from the brief observations customary when using an observation schedule. Moreover, pre-determined time intervals for observation are likely to conflict with the collection of complete utterances and related discourse. Nevertheless, language looms large in discussions about special group children. Many of the intervention programmes we observed were called language programmes by those using them and language disabilities were mentioned frequently by the teachers whenever they talked about the children's problems. Therefore, it was important to gather

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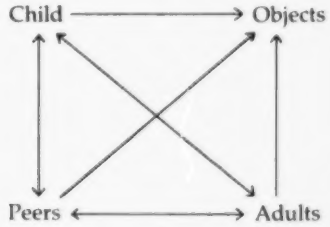
3. Mark R. Weinrott and Richard R. Jones, Overt versus Covert Assessment of Observer Reliability, *Child Development*, 1984, 55, 1125-1137.

information about language and to collect this in a manner that would match the abilities of all our children. We decided to observe how children *used* whatever language capacities they possessed.

The Structured Observation Schedule

The structured observation schedule, like the running record and Learning Event Checklist, was based on the following model of learning:



This model is explained in detail in *Joining In: Children and Learning*.

The model shows two-way arrows linking all the human agencies for learning: the child, the adult, and the peers. The human agents are linked to the objects and activities by means of arrows which go only one way. The reasoning behind this is that human beings, unlike objects and activities, set learning goals for themselves and others, and they can re-negotiate these goals as learning progresses. This by no means denies the importance of objects and activities, and how they are arranged and presented, as elements in a child's learning, but objects and activities are arranged by persons, such as teachers and supervisors, and manipulated or explored by children. Children learn from seeing adults and other children using objects. The adult's choice of equipment, use of equipment, and arrangement and presentation of activities give a child many opportunities for learning. In *Joining In: Children and Learning* the focus is on the primary role of the human agents in helping a child to learn. In the present report much more is said about the objects and activities of the early childhood environment. Objects, just by their nature and placement can often direct a child's action, provide opportunities for children to meet and get to know each other, and

suggest to adults new ways in which children's needs can be met.[4]

With the structured observation schedule, each separate observation of a child showed who the child was with, what preschool activity the child was engaged in, what the child's actions were with respect to that activity, whether the child spoke and, if so, what the function of the child's utterance was, whether anyone spoke to the child and, if so, how the child responded, and finally, what kind of feeling state could be inferred from the child's behaviour.

Hence the schedule collected information on six main variables. The first, called *Group Size and Composition*, was designed to capture information on a child's association with *adults* and *peers* as indicated in the learning model. The group size variable also included a category, called *Gazing away*, to give an indication of whether the child was working with the group or focussing his or her attention away from the group and its activities. A child may be in a group but not part of it, or near an activity but not engaged in it. Therefore, in addition to codes to record the size and composition of a group, *Gazing away* could be recorded if a child was not attending to whatever activity the group was engaged in, or if he or she was looking away from a particular activity. The category *On mat* assumed the presence of adults or that a child was sitting waiting for a group session with adults.

The second variable, *Preschool Activity*, represented the child's engagement with *objects* as shown in the model. *Child Activity*, the third variable, matched *child* in the learning model. It focussed on the complexity of the child's own behaviour and not on the objects or preschool activities with which the child was engaged. The first three variables were concerned with the child's physical engagement with the environment, the child's physical presence within groups, and the child's interaction with particular activities and objects.

The next three variables elaborated the model in a different manner. The fourth and fifth dealt with the dynamics of social interaction. *Child's Speech Functions* drew attention to whether the child spoke during the time of observation. Utterances were classified according to what appeared to be the child's intention for their use. *Response to Speech* captured information on whether

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4. I am indebted to Guy Broadley for comments on the model of learning.

anyone spoke to the child and, if so, who spoke, and whether and how the child responded. Finally, there was a simple measure of the child's affective or feeling state, called *Child's Behaviour.* Two completed observation schedules appear on the following pages.

In addition, all observers (listed at the back of this booklet) were asked to observe the children in the special group and to answer the following question:

> Does this child, as you observe him or her, have difficulty beyond what would be usual for other children in the preschool in any aspect of:
>
> (a) physical activity,
> (b) intellectual activity,
> (c) social activity,
> (d) emotional expression?

The observer's judgement was later checked with the judgement of the teachers or supervisors, and with the mother in the case of those children whose parents were inteviewed. A decision was then made to classify the child according to one of the four broad functional categories of disability.

The schedule went through several trial forms.[5] The set of instructions for using the schedule and the decision procedures relating to individual items are shown in the appendix.

Sample

At the time the study was made there were 38 kindergartens and 1 playcentre with special groups within them. A sample, consisting of two matched groups of children, was selected in the following way:

1. In each centre the longest enrolled and shortest enrolled special group children were matched with comparison children from the main roll on the basis of sex and date of enrolment.
2. Length of enrolment was calculated for the morning session

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5. We are grateful to the Wellington, Mana and Upper Hutt Free Kindergarten Associations for access to the kindergartens where it was tried out.

Name: Gary

Structured Observation Schedule

Description of Child's Appearance: Navy and red shirt, navy shorts, brown hair

Kindergarten/Playcentre: Apple Park

Time: 9.30

Emotional functioning

Group Size and Composition	1 Alone	2 Gazing away	3 With 1 child	(4) With 1 adult	5 With more than 1 adult	(6) With 2-5 children	7 With large group of children	8 On mat
Preschool Activity	1 Adventure/ outdoor	2 Blocks	3 Books/ stories	4 Carpentry	5 Clay	6 Collage/ craftwork	7 Conversation	8 Cooking	(9) Dough
	10 Family	11 Finger painting	12 Manipulative	13 Mat	14 Maths/ science	15 Morning tea	16 Music/ singing	17 Nature/ animals	18 Painting/ drawing
	19 Sand	20 Small toys	21 Tidying/ cleaning	22 Water	23 Withdrawal	24 Other	25 Not engaged in activity		
Child Activity	1 Solitary or parallel play without speech			(2) Solitary or parallel play with speech			3 Collaborative activity with or without speech		
Child's Speech Functions	1 Silence	Intra-individual: 2 Comment	(3) Vocal play	4 Problem solving	Communicative: 5 Regulates others' actions	6 Obtains objects	7 Calls attention to self or objects	8 Social interaction routine	9 Obtains information (identify/ locate)	10 Obtains information (clarify)
Response to Speech	(1) Nobody spoke to child	2 Adult spoke to child	3 Another child spoke to child	4 Verbal response	5 Non-verbal response	6 No response	7 Appropriate response	8 Inappropriate response		
Child's Behaviour	(1) Average	2 Happy	3 Initiating	4 Sad	5 Clinging	6 Rejecting	7 Aggressive			

Brief description of behaviour observed including any utterance

Is making his presence felt by pushing a large heap of dough all around the table. Sing-song utterance, 'Ah dee die'. Almost - but not quite - aggressive.

Name: Brent

Structured Observation Schedule

Description of Child's Appearance: Fair hair, fawn jersey, khaki shorts

Kindergarten/Playcentre: Montrose

Time: 11.35

Intellectual Functioning

Group Size and Composition	1 Alone	2 Gazing away	(3) With 1 child	4 With 1 adult	5 With more than 1 adult	6 With 2-5 children	7 With large group of children	8 On mat
Preschool Activity	1 Adventure/ outdoor	2 Blocks	3 Books/ stories	4 Carpentry	5 Clay	6 Collage/ craftwork	7 Conversation	8 Cooking	9 Dough
	10 Family	11 Finger painting	12 Manipulative	13 Mat	14 Maths/ science	15 Morning tea	16 Music/ singing	17 Nature/ animals	18 Painting/ drawing
	19 Sand	20 Small toys	21 Tidying/ cleaning	(22) Water	23 Withdrawal	24 Other	25 Not engaged in activity		
Child Activity	(1) Solitary or parallel play without speech			2 Solitary or parallel play with speech			3 Collaborative activity with or without speech		
Child's Speech Functions	(1) Silence	Intra-individual: 2 Comment	3 Vocal play	4 Problem solving	Communicative: 5 Regulates others' actions	6 Obtains objects	7 Calls attention to self or objects	8 Social interaction routine	9 Obtains information (identify/ locate)	10 Obtains information (clarify)
Response to Speech	1 Nobody spoke to child	2 Adult spoke to child	(3) Another child spoke to child	4 Verbal response	(5) Non-verbal response	6 No response	(7) Appropriate response	8 Inappropriate response		
Child's Behaviour	(1) Average	2 Happy	3 Initiating	4 Sad	5 Clinging	6 Rejecting	7 Aggressive			

Brief description of behaviour observed including any utterance

Other children moving towards mat. Brent supposed to be emptying water trough but actually trying to stop water running out by holding hand over outlet. Child says, 'let the water go', Brent removes hand.

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only and did not take any earlier attendance at afternoon sessions into account.

3. If more than one main roll child fitted the selection criteria, matching was carried out on the basis of age.

Because one child in one of the matched pairs was absent from a kindergarten on the day of the visit, 39 pairs of 'longest enrolled' children were observed and 38 pairs of 'shortest enrolled'. The total sample of 154 children who were observed with the structured observation schedule was made up as shown in Table 1.

Table 1
Composition of the Structured Observation Sample

	Special Group	Main Roll	Total
Girls	26	26	52
Boys	51	51	102
	77	77	154

The 77 special group children selected for the structured observation sample were also part of the larger sample of 138 special group children who were observed by means of the running record and Learning Event Checklist. The ratio in the structured observation sample of 102 boys to 52 girls was virtually the same ratio (2:1) as that for the whole special group sample (91 boys and 47 girls).

The ages of the children in the matched groups were comparable, except that, in the group who were four and a half years and over, there were 18 children in the special group sample who were more than five years old compared with only 2 children in the main roll sample. The main roll children had turned five near the end of the year and were waiting until the next year to enter school. At the time the data were collected the circumstances under which over-age children could continue to be enrolled at free kindergartens were set out in a Department of Education memorandum drawn up in 1976 (E25/1/20). Continued attendance at kindergarten was generally preferred over other options for children who could be

expected eventually to enter either a primary school or some specialized agency for children with a handicap. Over-age placement was envisaged as a short term measure, and a decision for such placement was arrived at only after discussion by a range of people, including the parents of the child. The introduction of an official policy for the mainstreaming of children with handicaps in regular primary schools has meant that the policy of retaining children who are five years of age in free kindergartens is currently being reviewed. Because schooling is not compulsory until the age of six years, a parent may choose to retain an over-age child in playcentre and seek the agreement of other members of the centre in order to do this.

In analysing the results from the observation schedule, the structured observation sample was treated in one or more of the following three ways: collectively, according to the four broad functional categories of disability, or according to gender.

The educational handicaps of the 77 special group children selected for observation by means of the structured observation schedule are shown in Table 2, together with the handicaps for the total sample of 138 children in the special groups. The percentages for the four disability groups show a close match between the structured observation sample and the total special group sample.

Observers

The preschools visited were situated throughout New Zealand and observers were recruited in different areas. Two observers, one of whom was always a permanent member of the project, visited each preschool. The team of observers had all had previous training in observation. Some had had playcentre training, some had had kindergarten training and one was doing an advanced course of child study at university. Each observer was asked to study in advance the structured observation schedule and instructions for its use. Before the observation proper, a project member conducted a training session for each observer in a kindergarten without a special group.

Following the observation of the target children, the observer's recording was checked by the permanent member of the team and

Table 2

Categories of Disability for the Structured Observation Sample Compared with the Total Special Group Sample

Disability	Structured Observation Sample Number	%	Total Special Group Sample Number	%
Physical				
Hearing impaired	8		22	
Vision impaired	4		4	
Physical disabilities involving the limbs	5		7	
Spasticity and sensory defects (more than one physical handicap)	1		1	
	18	*23.4*	*34*	*24.6*
Intellectual				
Developmental delay, Down's Syndrome, general intellectual retardation	15		29	
Multiple handicaps with intellect as a major component	3		4	
Organic growth disorders, retarded physical and intellectual growth	3		8	
Mute conditions, severe speech delay	12		20	
Articulation problems, mispronunciations but syntax intact	2		3	
	35	*45.4*	*64*	*46.4*
Social and Cultural				
English as a second language	1		3	
Delayed development arising from economic and social conditions	3		7	
Failure to understand and respond to the social environment (e.g., autistic symptoms)	3		3	
Functional disability from cultural difference	3		6	
	10	*13.0*	*19*	*13.8*
Emotional				
Fears and phobias	6		10	
Hyperactivity	1		1	
Uncontrollable behaviour (e.g., tantrums, destructive behaviour)	7		9	
No data available on child's condition	–		1	
	14	*18.2*	*21*	*15.2*
	77	100.0	138	100.0

the observer was encouraged to discuss any difficulties she experienced.

At the same time as the structured observations were being carried out, the second observer, the permanent member of the team, made the running record and filled in the Learning Event Checklist for all the children in the special group, including those in the structured observation sample.

Observers were asked to write down at the bottom of the schedule what a child said and did. Before any data were analysed, time was spent examining the records. In the case of a variable coded in a way that did not match the situation as described, the verbal description of the speech and behaviour of the child was used for subsequent re-coding. If there were further problems, the running record for that child was examined and this often clarified the issue.

Consistent differences in interpretation of similar forms of behaviour by any one observer were re-coded to a common standard. Where it was impossible to verify a code which seemed incorrect, the information was discarded and treated as missing data. Although very little had to be discarded, there were continuing difficulties with the variable *Child Activity*. These difficulties were resolved by combining codes. The way in which this was done is described on pages 55-56.

Procedure

Organizations with an interest in children with special needs were informed of the project. Permission to carry out the study was sought, before the observation visit, from kindergarten associations, the playcentre association, the teachers in the kindergartens and the supervisors in the playcentre.

Apart from those children who did not arrive within the first half hour or who left early, each child in the sample was observed on six occasions during the course of the morning, beginning at 9.00 a.m. Further observations were carried out at half hour intervals. An observation during the group activity called 'mat-time', generally held in kindergartens at the end of the morning, was included. The children were observed in a regular order starting with the longest enrolled pair. If a child was not present during

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the first observation he or she was observed five minutes after arrival and then at the next scheduled time.

The record began with what the child was doing at the moment the observer located him or her, with the proviso that, if the child was moving towards a particular activity, the observer should allow the child time to reach his or her goal. The observer recorded what could be seen in a 'snapshot' of the child and what he or she was doing at the time the recording commenced. The observer recorded any utterance produced by the child and the nature of the response if someone spoke to the child. Observers were asked not to prolong the observation period but to make it long enough to enable the function of any speech to be interpreted.

As soon as the first child had been observed, the observer proceeded without delay to the next child in order to minimize the effect of different activities being available to some children and not to others.

Results

If all the sample children had been present at every observation session, there would have been 936 separate observations (4 children x 6 observations x 39 preschools). Because in one preschool only one special group child attended on the day of observation, the possible observations were reduced to 924. Of these, a further 10 observations were missed through a child's absence at the time of one of the 6 observations. Altogether, 914 observations were carried out on the total sample of 154 children (77 main roll and 77 special group). Of these, 459 observations were carried out on the special group children and 455 observations were carried out on the main roll children. Details of the observation results are given in the following sections.

Size and Composition of Groups

Group Size and Composition was a measure of the number of people in, and the composition of, the social setting in which a child was situated at the time of observation. It encompassed the people who were part of the child's learning environment. The group could include adults, other children, both adults and children, or neither.

In order to define a group, observers were instructed to:

- Look first for children and adults who are near each other.
- If a number of people are near each other but seem to be doing different things, look also to see whether they share an activity. For example, a child may not be physically near a group of children making a fort, but may be getting wood for the group's construction.
- In ambiguous situations judge whether an activity is shared by looking to see whether there is joint attention.

The code labelled *On mat* covered the situation where a child was sitting down with a large group of children and waiting for, or taking part in, activities directed by a teacher. It was treated as a separate kind of group from *Large group of children*. The former is a grouping initiated by a teacher and the latter is a grouping chosen by a child.

Table 3 shows how frequently the sample children were observed in the different types of group. Missing observations have been omitted from the calculations.

Table 3

Group Size and Composition in Special Group and Main Roll Samples

Group Size and Composition	Special Group Observations			Main Roll Observations		
	Number	%	Rank	Number	%	Rank
Alone	95	20.7	1	57	12.5	5
With 1 child	38	8.3	6	59	13.0	3
With 1 adult	66	14.4	3	12	2.7	8
With 1 adult, 1 child	18	3.9	8	10	2.2	9
With 2-5 children	55	12.0	5	108	23.7	1
With 2-5 children + adult/s	82	17.9	2	58	12.8	4
With large group of children	15	3.2	9	52	11.4	6
With large group of children + adult/s	28	6.1	7	32	7.0	7
On mat	62	13.5	4	67	14.7	2
	459	100.0		455	100.0	

Although there were differences between the two samples in the frequency with which they were observed in groups of different size and composition, the special group children were observed in groups of all different sizes and composition. This is one objective measure of the success of integration in early childhood centres.

The major difference between the two samples of children lies in the greater proportion of times the special group children were observed either alone or with one adult. Very few of the main roll children were observed solely with one adult. This difference is in part a consequence of the attention given by the special group teacher to the children for whom she is responsible, and in part a consequence of the need of these children for individual attention. The special group children were observed more often than main roll children in a small group of children if an adult was present. The role of the adult can also be seen in the finding that, within the special group, children were more frequently observed in a large group of children when there was an adult present than when there was not. The reverse was true for the main roll children. They were more likely to be in a large group if there was no adult present. Special group children were nearly four times more likely to be in a small group of children (2-5 children) than in a large group.

The time of the morning seemed to make little difference to the size of groups or their composition, except for the sixth observation which was carried out at mat-time (in those centres which had a group session at the end of the morning), and most children were involved in this group activity directed by a teacher.

Figure 1 compares the observations from the two samples according to whether children were alone, in a group composed solely of children, or in a group in which one or more adults were present.

Group Size and Disability

Children with social and emotional disabilities were observed alone slightly more often than children with physical or intellectual disabilities. Children with physical disabilities were observed more often with teachers than other special group children were because they generally needed more assistance in moving to fresh activities, and often help with the activity itself.

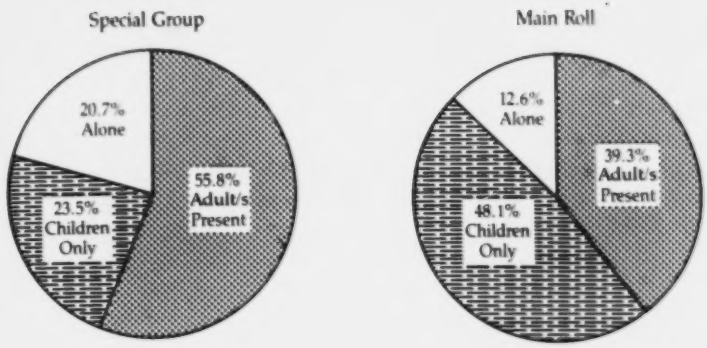

Figure 1
Proportion of Observations of Special Group and Main Roll Children in Different Types of Group

Gazing Away

Whether or not the special group children were alone or with others they were about twice as likely to be gazing elsewhere as children from the main roll (19.7 percent of observations of special group children compared with 8.4 percent of main roll children). No difference was observed between boys and girls in the whole sample in the frequency with which they gazed in this manner. Children often gaze away because they are not attending to some activity that others want them to attend to, or because they are deliberately attempting to avoid engagement with others. This kind of gazing away, which was coded as part of the observations of group size, may be a looking aside to avoid an experience which is uncomfortable for the child. Children with intellectual disability were observed to be gazing away less than children with other disabilities.

We noted, but did not code, several other forms of gazing. A child might be playing with blocks but looking up every now and again to see what other children were doing in a music group. Children gazed a lot at the more daring outdoor activities. One child was walking a tricycle round and round outside, and every time she came near a climbing net, which had children clinging to it, she stopped and stared before continuing her progress with the

tricycle. Some children did not appear to be gazing but nevertheless took quick peeks at children engaged in other activities.

Possibly gazing of the onlooker kind is an undervalued activity because the child gives the impression that he or she is not doing anything in particular. (And yet the adult observers in this study were themselves 'gazing' in order to find out what the children were doing.) Many children watch and analyse and then they 'have a go'. The activity they gaze at can provide teachers with clues to the child's desires and level of development.

Activities in the Preschool

The variable *Preschool Activity* covered the equipment, objects, or teacher-planned activities of the preschool, together with the way in which the teacher or supervisor arranged, used or presented these.

The wide choice of activity in a kindergarten or playcentre was reflected in the 25 different activities coded as a result of our observations. Children who did not appear to be doing anything in particular were coded as *Not engaged in activity.* The list of activities follows. Clay was available in only one centre but otherwise all centres had the same types of equipment and activities. Playcentres do not have a mat-time and neither did a few of the kindergartens. The raw figures are given for the number of times special group children and main roll children were observed in each activity.

Adventure/outdoor/big muscle play

Forts, climbing frames, construction with large materials, tree climbing, large trolleys, tricycles, climbing nets, ropes, swings.

Special group: 76 observations
Main roll: 87 observations

Blocks

Large sets of blocks made for construction purposes, such as building roads, towers and bridges. Often combined with objects, such as model cars and trucks.

Special group: 7 observations
Main roll: 17 observations

Books/stories/listening posts

Looking at picture books, hearing a story read or told. Hearing a story on tape through a listening post.

Special group: 24 observations
Main roll: 33 observations

Carpentry

Construction with off-cuts of wood, saws, hammers and nails at a carpentry table.

Special group: 5 observations
Main roll: 13 observations

Clay

For simple handling and for making moulded shapes.

Special group: 0 observations
Main roll: 3 observations

Collage/craftwork

The construction of three-dimensional assemblages from found materials, making Christmas and greeting cards, invitations and so on.

Special group: 11 observations
Main roll: 15 observations

Conversation

Children often hold conversations with adults or other children without reference to a particular activity.

Special group: 6 observations
Main roll: 8 observations

Cooking

Real cooking, for example, toasted cheese or scones. Usually a small group of children and a teacher working together.

Special group: 3 observations
Main roll: 8 observations

Dough

Dough, generally coloured, used for rolling, twisting, shaping, accompanied by patty tins and trays and a child-sized oven.

Special group: 21 observations
Main roll: 16 observations

Family

A space within the preschool set up with objects found in the home,

adult clothing, hats and shoes for dressing up, a bed and a pram, doll babies.

Special group: 18 observations
Main roll: 16 observations

Finger painting

With coloured paste on a table top, generally followed by making a print of the pattern produced.

Special group: 3 observations
Main roll: 4 observations

Manipulative

Formboards, puzzles, simple jigsaws, pegboards, posting boxes and similar material, generally set out on a table. The difference observed for this activity, between children from the two types of roll, reflects in part the extensive use made of manipulative materials by teachers when working with special group children.

Special group: 40 observations
Main roll: 16 observations

Mat

The whole group of children come together to sit on a mat and to take part in teacher-directed activities. Usually held at the end of the morning in kindergartens.

Special group: 61 observations
Main roll: 68 observations

Maths/science

Usually special activities arranged by a teacher and involving sensory experience, for example, comparison of weight and size, flotation, and number concepts, such as one-to-one correspondence.

Special group: 3 observations
Main roll: 4 observations

Morning tea

May be arranged so that all children sit down at the same time to have a drink of milk or juice and eat a piece of fruit or other food. Alternatively, something to eat and drink may be placed on a table or trolley for children to help themselves when they feel like having morning tea.

Special group: 17 observations
Main roll: 18 observations

Music/singing

Dancing to music, playing instruments as accompaniment for a song,

group singing, individual exploration of sounds made by various simple instruments, such as xylophones.

Special group: 20 observations
Main roll: 21 observations

Nature/animals

Live animals, such as rabbits, guinea pigs, fish, birds, frogs, cared for and observed. Also a display table on which to put natural objects found by teachers and/or children.

Special group: 6 observations
Main roll: 8 observations

Painting/drawing

Easel painting using paint on newsprint. Drawing with felt tip pen or crayon at a table.

Special group: 25 observations
Main roll: 23 observations

Sand

A sandpit. Certain toys associated with this, such as tip trucks, spades, buckets. May be combined with water play in some circumstances, for example, water from a container to pour into a hole dug by children in sand in order to watch it drain away. (The latter is permitted in some centres but not in others.)

Special group: 23 observations
Main roll: 37 observations

Small toys

A variety of small objects, such as model cars, small trucks, family replicas, which children may use in their own way, independent of particular activities.

Special group: 5 observations
Main roll: 2 observations

Tidying/cleaning

Tidying or cleaning up after own activities or helping with the general tidying.

Special group: 12 observations
Main roll: 10 observations

Water

The main form is a water trough on a stand provided outside if weather is warm, and inside if it is not. Used with containers of different shape and size and short pieces of hose and straws. In hot weather hosed

water may be used for construction work or to hose a fence or wall.

Special group: 32 observations
Main roll: 10 observations

Withdrawal

Child taken away from the main activities for special activities with a teacher.

Special group: 18 observations
Main roll: 1 observation

Other

Seasonal activities, such as decorating a Christmas tree, preparing for a birthday party, decorating the room, helping to cut up fruit brought to the preschool, preparing for an outing.

Special group: 11 observations
Main roll: 5 observations

Not engaged in activity

Child may wander around the premises without any apparent purpose or stand still, perhaps looking in a general way at the activities available and at the other children.

Special group: 12 observations
Main roll: 11 observations

Only 23 instances of children not taking part in any activity were observed. The lack of evidence, in either sample, of children not engaged in activities suggests that most children were purposefully employed during the course of the morning.

The observations were made mainly in the summer months and for the majority of our visits the weather was fine. Adventure play outdoors was the most popular activity with all children. This category covered a range of activities.

During most of the morning, when children were allowed to choose their own activites, there was often nothing to differentiate the special group children from the others. Teachers expressed pride when the special group could not be picked out from the other children.

As the results show, the special group children were observed taking part in all activities except for clay. This was another measure of successful integration (or mainstreaming).

There are differences between the two samples. *The special group children were observed more often in manipulative activites, water play and in withdrawal sessions with the special group teacher. Main roll children were observed more often in rough-and-tumble outdoor activities and in activities in the sandpit which often required co-operation between children.* Water play, where more of the special group children were observed, is generally an activity involving parallel play. In this type of behaviour the child plays alongside other children, using similar material or equipment, but without trying to influence another's activity.

Because of the large number of preschool activities the numbers are too small in each category to pick up major trends associated with disability, but intellectually and socially disabled children were more often involved in outdoor play than children with physical and emotional disabilities.

Gender Differences in Preschool Activities

There has been much interest in differences in the preschool activities that engage the attention of boys in contrast to girls. This issue was examined for the sample as a whole, that is, for the combined sample of special group and main roll children. The calculations were based on the number of boys and girls who took part in particular activities and not on the number of times each child was observed in these activities.

More boys than girls in the combined sample were observed in block play, outdoor play, and in the sandpit.[6] More girls were observed in manipulative play, in family play and in painting and drawing.

Whereas 13.7 percent of the boys were observed in block play,

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6. Similar results appear in studies of children without special needs. See, for example, Jan Halliday and Stuart McNaughton, Sex Differences in Play at Kindergarten, *New Zealand Journal of Educational Studies*, 1982, 17, 161-170; Anne B. Smith, Sex Differences in Activities in Early Childhood Centres, *New Zealand Journal of Psychology*, 1983, 12, 74-81. See also, Anne B. Smith, Teacher Modelling and Sex-typed Play Preferences, *New Zealand Journal of Educational Studies*, 1985, 20, 39-47; Anne Meade and Frances Staden, *Once Upon a Time, Amongst Blocks and Car Cases*, NZCER, set, 1985, 2.

the figure for girls was 3.8 percent. The only two girls observed in block play were both in the special group. Twenty-nine percent of the girls were observed in family play versus 12.7 percent of the boys; of these boys, two-thirds were special group boys.

There were differences in manipulative play, both on the basis of gender and on the basis of whether children were in the special group or on the main roll. A third (33.3 percent) of the special group boys and half (50.0 percent) of the special group girls were observed in manipulative activities. The comparable proportion for main roll boys was 15.7 percent and for main roll girls, 23.1 percent.

A greater proportion of girls than boys was observed painting and drawing but there were no significant differences between special group and main roll children for this activity.

The sandpit was dominated by boys: 43.1 percent of the main roll boys and 35.3 percent of the special group boys were observed there. Only 15.4 percent of the main roll girls and 3.8 percent of the special group girls were observed there.

In sum, there were clear differences on the basis of gender in block play, family play, manipulative play, painting and drawing, and activities in the sandpit. Apart from painting and drawing, these differences were maintained in both special group and main roll samples.

Complexity of the Child's Activity

The measure of *Child Activity* was designed to assess the complexity of children's actions. When you observe young children you can see that sometimes they are carrying out just one kind of action or are involved in just one activity. At other times they may be doing two or more things at once. For example, a child may be rolling out dough and trying to capture the attention of others by calling out, 'Hey, look at me!' Or, the same child may be rolling out dough while also having an animated conversation on a topic unconnected with dough. Another child may be digging in the sandpit and turning around from time to time to fend off other children. Yet another child may be unpacking a lunch box, eating an apple and

talking to a neighbouring child. Originally the observation schedule included six different types of child activity, varying in complexity, which were identified during the observations carried out during the development of the schedule. Unfortunately, the coding scheme which identified these six behaviours proved to be too complicated, and when the observers recorded the behaviour of the children in the observation sample they had difficulty in distinguishing one type of behaviour from another in the more complex categories. For example, if children were side by side, observers found difficulty in deciding, during the brief period of observation, whether the child was engaged in solitary play, or whether the child was influenced by what other children were doing and was therefore engaged in parallel play. Accordingly, after the data had been collected, the coding scheme was simplified by combining categories and reducing them to three. These were then given new names. The revision process is described more fully on page 55f.

The first type of child activity was *Solitary or parallel play without speech*, the second was *Solitary or parallel play with speech* and the third category was *Collaborative activity*. While an episode of collaborative activity almost invariably involves speech, it may not involve the use of speech by all participants. Therefore, a child will not necessarily be using speech at the time of observation. The key feature of collaborative activity is that a child can only participate if he or she can grasp the intentions and points of view of others.

As Table 4 shows, children from both special group and main roll samples were observed in all three types of child activity. In both groups, children were observed most often engaged in *Solitary or parallel play without speech* and least often in *Collaborative activity* with other children. The main roll children were more likely than the special group children to be observed taking part in collaborative activity, or in activities accompanied by speech. Over two-thirds of the observations of special group children showed them engaged in *Solitary or parallel play without speech* compared with over half of the observations of main roll children.

Like all the other measures, this one of the complexity of behaviour did not measure a single factor, such as a child's ability to concentrate. It also captured the effort necessitated by a particular activity or piece of equipment, the child's familiarity with an activity, the child's interests at the time, the demands made by other people, adults or children, and also the amount of effort that a child might

need to put into overcoming his or her disability, if any. For example, a child who is visually impaired may have to pay so much attention to deciphering the visual signals that chatting with others at the same time is out of the question. A child with a disability may have to put so much energy into using a hammer, or grasping the plot of a story, or working out what is required of him or her, that many things which are automatic and unconscious for other children require his or her conscious effort.

Across the combined sample of special group and main roll children, a higher proportion of the observations of boys (64.1 percent) showed them engaged in *Solitary or parallel play without speech*. The comparable figure for girls was 58.5 percent. On the other hand, boys were slightly more likely than girls to be observed in collaborative play: 4.7 percent as against 2.9 percent.

Table 4
Complexity of Child Activity Observed in Special Group and Main Roll Samples

Activity	Special Group Observations		Main Roll Observations	
	Number	%	Number	%
Solitary or parallel play without speech	318	69.9	257	56.5
Solitary or parallel play with speech	124	27.2	171	37.6
Collaborative activity	13	2.9	27	5.9
	455	100.0	455	100.0

Observations of the Child's Speech

The Child's Speech Functions

The classification used for the children's speech was based on its *use* or *function* and not on its clarity or its syntax, or on the length of utterance, or complexity of topic. Thus children who had very limited speech could be recorded on the basis of the function of whatever speech they used.

Speech has a surface form which you can hear and an underlying meaning which you must interpret. Speech also has a use or function which depends upon its surface structure, its meaning, and the linguistic and environmental context in which it is uttered.

A particular *function* can be expressed in utterances of varying grammatical form. We do not have to utter a grammatical question in order to ask a question. Compare 'What's that called?' with 'I wonder what its name is.' Indeed, speech patterns regularly vary according to factors such as the situation in which the utterance occurs, or the social class of the speaker, while the functions of that speech remain the same.

A middle class mother is likely to use indirect, polite suggestions to give an order to her child. She may say, 'I think it would be a good idea to give David back his toy.' Another mother may say, 'Give that toy back at once, you little monster.'

On the surface, the first utterance is merely an expression of the adult's opinion while the second is a direct order. The children to whom the utterances are directed are likely to gain exactly the same meaning. The function of both utterances is to induce the children to return the toy to its owner. Each child's interpretation of his or her mother's utterance will not depend on the literal meaning of the words, or their grammatical form, so much as on how the utterance as a whole relates to the particular situation and on the mother's customary usage in that kind of situation. The child's interpretation will also depend upon concepts shared with the mother, such as 'ownership of toys', which are not spelt out in

either utterance. The explicitness of a mother's statement, its directness or indirectness, its degree of elaboration (the addition of reasons or explanations or polite phrases) may all vary while the general function of the speech remains the same across differences of gender, culture or class.

There are two major categories of language function: intra-individual and communicative. The intra-individual category includes the child's comments to him- or herself, vocal play, and self-instruction as the child tries to solve a problem. Other people may be present but the child does not make any effort to see that they are listening, for example, by trying to catch their attention first or by looking to see whether they are taking any notice.

The structured observation schedule included a category for no speech, or *Silence* (coded 1), as well as categories for the two major speech functions, *Intra-individual* and *Communicative*. Within each of the two speech categories the child's speech was further classified by function. The speech categories and sub-categories are explained below with examples. The numbers relate to code numbers on the schedule.

Intra-individual Speech

The decision procedure for the *Intra-individual* category as distinct from the *Communicative*, is to ask, 'Would the child have uttered the sounds whether or not anyone was listening?'

2. *Comment*
   Example: Sharon was all by herself pasting things on paper at the collage table. She said, 'That's on.'

3. *Vocal play*
   Example: Sounds and utterances, such as 'brm, brm' while playing with a truck. Making noises imitating animals, or other sounds initiated by the child and not in response to an adult's request.

4. *Problem solving*
   Example: Anna was doing a puzzle and guiding herself by saying, 'This goes here, this goes there.'

Communicative Speech

Children, like adults, use speech in order to do things. It matters to a child what effect his utterances have on others.

5. *Regulates others' actions*
   Examples: 'Go away', 'That's my chair' (with the intention of getting someone to move out of it).
   Justin announced, 'I'll paint the ladder.' Another child appeared and tried to take over. Justin said, 'No, *I* will.'
   Priscilla (with spina bifida), at the dough table with a small group of children, said, 'How about we make some cakes? Yeah. How about we press it down?'

6. *Obtains objects*
   Examples: 'Give me . . .', 'I want . . .', and similar usages intended to persuade someone else to convey an object to the speaker.
   Helen said, 'Can I have a turn of that?' (obtains an object by asking for it).

7. *Calls attention to self or objects*
   Examples: 'Look at me . . .', 'Look at this . . .', 'I've got a . . .', 'This is a . . .', 'See what I'm doing.'
   John said, 'Hey', as he was climbing on a towel rail, to draw attention to what he was doing.
   Bruce was cradling a rabbit and holding a lettuce leaf to its mouth. He said, 'Feeding this', to let people know what he was doing.

8. *Social interaction routine/responds to teacher questions*
   The classification of speech function used in this study describes speech in the context of interaction in the everyday world. Kindergarten and playcentre activities can be divided into two types according to the speech functions they elicit. During most of the morning when children choose their activities they talk mainly about what they are doing, about what they want, and about what they want others to do, and they comment on things occurring around them. However, a teacher, supervisor or other adult may ask the child to respond, such as when an adult asks a child to name colours, answer questions about a story, or respond in a singing game. Most of the utterances that were

part of a tutorial or teaching situation were placed in the category, *Social interaction routine*, because they were characterized by their predictability. Adults knew the answers and were testing whether the children knew them too. Other highly predictable uses of speech included conventional phrases, such as 'hello' and 'goodbye'. 'Yeah, yeah' was classified as a social interaction routine. So too were imitations of polite adult conversation in family play: 'Would your baby like some tea?' 'No, thank you. Not today.' Here is an example from the records of a social interaction routine:

> At morning tea time Janet was with the special group teacher. After prompting from the teacher, she said, 'Yes, please.'

When the results were analysed most of the utterances in the *Social interaction routine* category turned out to be ones derived from teaching situations. For this reason such utterances often appeared during the sixth observation which, as has already been explained, was generally of the group activity called mat-time, when the teacher leads the children in stories, finger plays, songs and games. The other occasion for such utterances was when children were in withdrawal sessions with the special group teacher.

9. *Obtains information to identify, or locate, persons or objects*
This is a category of questions about objects and their location. 'Where's . . .?', 'What's . . .?' are examples of the type of utterance but 'Wh' sentences were not necessarily used when children wanted information.
Peter showed limited use of speech forms. He said 'Oven' to a teacher who recognized that he was probably trying to obtain information about the location of something. She said, 'Are you looking for the oven?' Peter replied, 'Oven.' Together they found it.
'What was that noise? Did you hear it?' came from Derek, a child with hearing loss.

10. *Obtains information to clarify another person's utterance*
This category included questions about utterances themselves, such as 'What did you say?', 'What did he say?'

Use of Speech

Amongst the special group children the ratio of silence to speech was 50:50 in the episodes observed. Amongst the main roll children the ratio of silence to speech was 39:61. The ratio of intra-individual speech to communicative speech for the two samples was: special group, 27:73, and main roll, 13:87.

The special group as a whole had more difficulty than did children from the main roll in using speech for communicative, that is, social, purposes. Eight observations were missing for the special group sample and 11 for the main roll sample. Table 5 gives an analysis of the speech functions observed in the two samples.

Table 5

Speech Functions Observed in Special Group and Main Roll Samples

	Special Group Observations		Main Roll Observations	
Speech Function	Number	%	Number	%
Comment	26	11.6	11	4.1
Vocal play	34	15.2	17	6.3
Problem solving	1	0.4	7	2.6
Regulates others' actions	26	11.6	57	21.0
Obtains objects	4	1.8	3	1.1
Calls attention	56	25.0	93	34.3
Social interaction routine	63	28.1	61	22.5
Obtains information (to identify/locate)	12	5.4	20	7.4
Obtains information (to clarify)	2	0.9	2	0.7
	224	100.0	271	100.0

There were some statistically significant differences between the two groups in terms of the speech functions observed. Special group children used intra-individual speech for comment and for vocal play more frequently than children on the main roll did. More

utterances designed to regulate the actions of others came from the main roll group. In the observations of the special group children the most frequent speech function observed was responding to a teacher's questions (*Social interaction routine*). In the main roll sample the most frequently observed speech function was calling attention to oneself.

Gender Differences in Speech Functions

Whether they were main roll or special group the boys showed a greater tendency to tell others what to do than did the girls. Table 6 shows the numbers and percentages of children using forms of speech designed to make other people do things. The percentages were calculated on the basis of 51 boys and 26 girls in each roll sample.

"Go away".

A different picture emerged when the category of *Social interaction routine* was examined. In this comparison the proportions for use of this function among the main roll boys and girls and the special group girls were similar but the special group boys were less likely to have used this type of speech function (see Table 7).

Table 6

Frequency of 'Regulates others' actions' according to Gender and Roll Type

Gender	Special Group		Main Roll	
	Number	%	Number	%
Boys	18	(35.3)	30	(58.8)
Girls	6	(23.1)	12	(46.2)

Table 7

Frequency of 'Social interaction routine' according to Gender and Roll Type

Gender	Special Group		Main Roll	
	Number	%	Number	%
Boys	22	(43.1)	28	(54.9)
Girls	15	(57.7)	14	(53.8)

The findings show that more preschool boys than girls used forms of speech to establish dominance over others and that the pattern was the same whether the children were from the special group or the main roll. Social interaction routines involve conforming to the wishes of others or to more general rules for polite usage. Fewer of the special group boys than the special group girls were observed using this type of speech function, which suggests that the latter were more biddable and the boys more likely to assert themselves by refusing to respond when they were asked to do something. In short, only two major differences surfaced in speech functions between the sexes. More boys than girls regulated the actions of others. More girls than boys used social interaction routines.

Children with handicaps classified under social disability were observed less often regulating the actions of others by means of speech than were children with other functional disabilities.

Speech Function and Group Size

Across the whole sample, calling attention to oneself was greatest when children were in small groups. On the mat, children were either silent or responding to the teacher.

Determinants of Speech Function

What determines the function of a child's speech? Play with trucks is likely to be accompanied by vocal play, 'Brm, brm', while a child stuck up a tree is likely to try to regulate the actions of others, 'Get me down.' Maturity of the child also plays a role. Although the classification of speech functions does not mirror a developmental sequence, some categories are developmentally later to emerge than others. Vocal play is within the ability of babies. Problem solving by talking through the steps of a task is more advanced than vocal play. Obtaining information through the use of questions is a relatively late acquisition and therefore less likely to be used by young children than statements such as 'He hit me.'

The form of the special group children's speech was often very limited, as in the case of Peter who said only 'oven', but their uses of language (that is the functions for which they used it) were broadly the same. Some of the special group children were advanced speakers with a full range of speech uses and good syntax at their command.

Whether or not a child is observed speaking during a preschool session may have little to do with 'language'. Speech events are controlled by:

- Motivational factors, such as confidence (remember Bridget, pages 7-11), and desire to obtain objects or assert authority over others.
- The presence of other people and whether or not they speak to the child. The category of *Social interaction routine* contained a substantial number of examples of responses to questions or comments from adults. Much of the speech classified as *Regulates others' actions* was speech directed at other children who were nearby.
- The objects in the environment and whether or not they

inspire comment, or whether speech is necessary in order to take part in the activity, for example, in joint construction of a fort.

Speech, like learning, is controlled by the child, by the speech of other children and adults, and by objects and activities. One type of speech event may exclude another. If a child is being given individual attention by a teacher the child cannot easily be communicating with a child at the same time.

Summary

The general conclusion is that the main roll children were observed to speak more frequently than the special group children and were more often observed using speech functions which drew attention to themselves or regulated the actions of other children. Nevertheless, a more important conclusion is that both groups of children displayed use of all speech functions. The differences were of degree rather than kind.

In view of the extent to which young children learn from each other, teachers should always be on the lookout for opportunities for other children to talk to the special group children. Indeed many teachers already do this, although some commented that it was not always easy.

The Child's Response to Speech from Others

Did anyone speak to the children during the time they were observed? If so, did they respond? How did they respond? And if they responded, was it an appropriate response? In 40.0 per cent of all instances observed no one was speaking to children from the special group and in 44.6 per cent of instances no one was speaking

to children from the main roll either. There were 274 observations during which someone spoke to a special group child and 252 observations during which someone spoke to a main roll child. The results of observations for *Response to Speech* are shown graphically in Figure 2. Instances when nobody spoke to the child have been omitted.

When the special group children were spoken to, it was by an adult in 83.6 percent of the instances. The corresponding figure for the main roll children was 52.4 percent. *The special group children were observed being spoken to by other children about one-third (16.4 percent) as often as were the children from the main roll (47.6 percent).* The particular attention they received from teachers often meant that special group children were withdrawn for one-to-one sessions and hence did not have quite the same opportunity to interact with other children. Some of the special group children had speech difficulties which tended to inhibit other children in making approaches to them.

The responses that the children gave were coded as *Verbal*, *Non-verbal* or *No response*, and also according to whether they were, in the judgement of the observers, *Appropriate* or *Inappropriate*.

In 46.4 percent of instances in which a special group child was spoken to, the child spoke in return, 50.6 percent gave a non-verbal response and 3.0 percent gave no sign of replying. In the main roll sample, when children were spoken to they gave verbal replies in 62.7 percent of instances, non-verbal replies in 36.5 percent, and 0.8 percent gave no reply. The greater willingness and ability of main roll children to use speech showed up clearly, but *comprehension* of what a child hears can be shown by non-verbal as well as verbal means, and the special group children made much greater use of non-verbal responses, such as head shaking, movement of hands, and turning away from, or moving toward, the speaker.

There was a significant relationship between who spoke to the child and whether the child gave a verbal or a non-verbal response. *Children in both groups were more likely to respond to adults in a non-verbal manner and to respond verbally to other children.*

More of the main roll children's responses (97.2 percent) were judged to be appropriate, compared with those from the special group children (81.8 percent).

Individual children displayed preferences for responding either to adults or to children. Most of the special group children

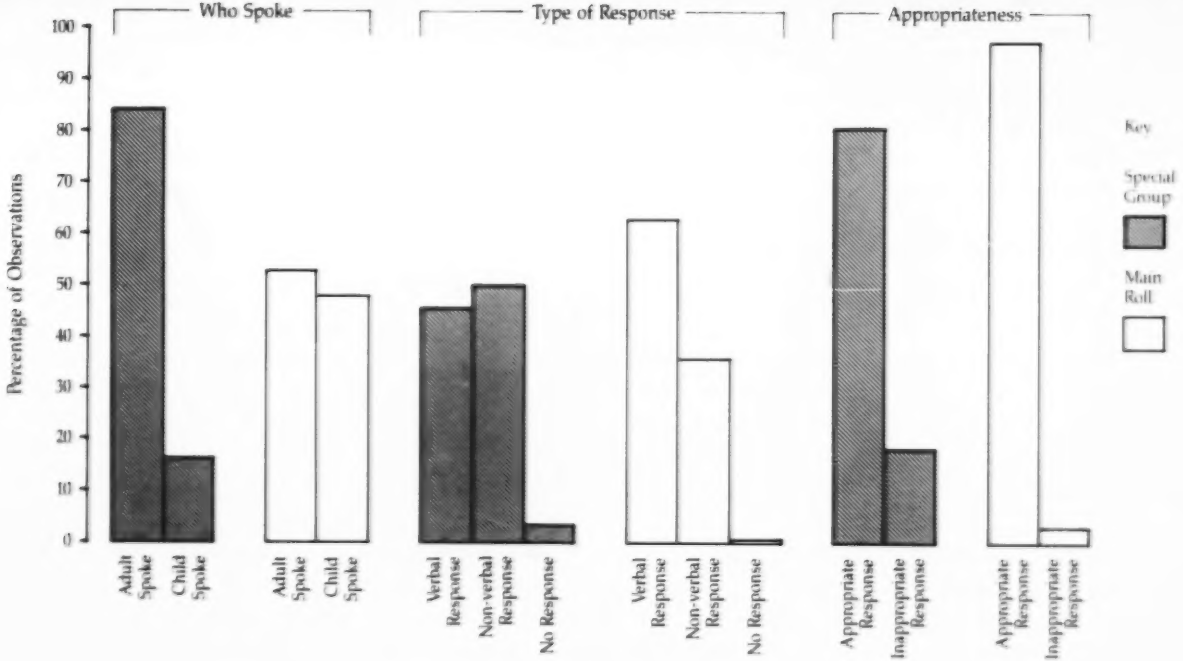

Figure 2
A Comparison between Special Group and Main Roll Samples of Who Spoke to Child and Nature of Response

responded mainly to adults, no doubt because many were used to depending on adults, but also because adults made special efforts to secure a response from them.

Both boys and girls in the combined sample were observed being spoken to by an adult in two-thirds of the instances in which someone spoke to them. Girls responded verbally slightly more often than boys, and girls' responses were judged appropriate slightly more often, whoever spoke to them. There was no difference apparent between the children of differing disabilities as to who spoke to them. Children with intellectual disability responded less often by verbal means.

The Child's Behaviour

In 80.3 percent of the observations the children in the combined sample were judged to be in an average emotional state – neither sad nor obviously happy. Table 8 shows that children in both samples displayed happiness in approximately the same proportion of observations. Only a small proportion of the observations were of negative emotions or forms of behaviour. More special group children were observed as unhappy, rejecting or aggressive. Most of the children who were 'special' were not overly aggressive and a few so-called 'normal' children were. There were certainly, however, some children, in both groups, who were persistently aggressive or clinging. If a special group child showed such characteristics they tended to be pronounced.

Children displayed the greatest expression of happiness when they were together for group activities in which the teacher might be telling a story, showing a puppet, or encouraging finger plays or music. These audience situations made the children laugh and smile.

From time to time in the pilot study a child was observed staying as close to the special group teacher as possible. Whenever she moved the child moved too. In one kindergarten an observer commented to a teacher on her follower and the teacher responded by saying, 'He's much improved. You should have seen him last

week; he was treading on my heels.' However, the observations revealed only one instance of this clinging type of behaviour, which suggests that such behaviour is readily noticed but not particularly frequent in relation to all other types of behaviour.

No great difference in behaviour or mood was observed according to gender except that the boys produced slightly more episodes of aggression.

Table 8

Child's Behaviour in Special Group and Main Roll Samples

Behaviour	Special Group Observations Number	%	Main Roll Observations Number	%
Average	377	82.9	393	87.9
Happy	49	10.8	47	10.5
Sad	8	1.7	1	0.2
Clinging	1	0.2	0	0.0
Rejecting	6	1.3	2	0.5
Aggressive	14	3.1	4	0.9
	455	100.0	447	100.0

Initiating Activities

It was rare to see any children initiating activities and getting others to join in with them. Mostly they worked alone, or simply joined in with other children already engaged in some activity, or they joined in with activities initiated by the teacher. The main roll children were more likely to initiate activities than the special group children (7.0 percent of observations compared with 2.6 percent) but the instances were so few that the difference is not significant.

Summary of Results

A sample of special group children was compared with a sample of main roll children matched for sex and length of enrolment. A structured observation schedule was used to make six observations of each child on six variables over the course of a morning. These variables were the size and composition of the group in which the child was situated, the preschool activity in which the child was engaged, the complexity of the child's behaviour when so engaged, the function of the child's speech, if any was uttered, the response given by the child if he or she had been spoken to, and the child's general emotional state.

Results showed that special group children were observed most often with an adult or in a group in which an adult was present. Main roll children were observed most often in groups with other children. The special group children were observed more often alone than the main roll children and more often gazing away from a group or activity. Nevertheless, the special group children were observed in all types of group, and much of the difference between the groups could be attributed to the extra attention given to the special group children by the special group teachers.

Twenty-five activities (including not being engaged in an activity) were observed in preschools. There was a high level of engagement in activities by children in both samples. The special group children were observed taking part in all types of activities. Differences overall between the two groups were not great, although the special group children were observed more often in manipulative activities, in water play and in withdrawal sessions with a teacher. Main roll children were observed more often in rough-and-tumble outdoor activities and in the sandpit. Again, the differences in activities could be related in part to adult intervention and the use of manipulative activities by the special group teacher for work with special group children.

There was a significant difference in the complexity of the behaviour observed in the two samples, the special group children being involved more in silent solitary or parallel play, and less in

collaborative activities, than the main roll group.

If children spoke during an observation their speech was classified according to one of nine functional categories. More special group, than main roll, children were not speaking at the time they were being observed. The special group children produced more instances of intra-individual, rather than communicative, speech. The most common speech function observed in the special group was a social interaction routine. In the main roll group, the most common speech function was calling attention to oneself.

The special group children were more often observed being spoken to by adults than were the main roll children. Special group children were observed responding non-verbally in half the instances observed when they were spoken to. The main roll children responded non-verbally in a third of the instances. In both samples, children were more likely to respond non-verbally when adults spoke to them. When other children spoke, children were more likely to respond verbally. For both samples, appropriate responses far outweighed inappropriate responses, although the special group children were observed making more inappropriate responses than the main roll children. In over 80 percent of the observations both special group and main roll children were judged to be in an 'average' emotional state. There was a greater incidence of behaviour judged to be negative, clinging, rejecting or aggressive in the special group.

The observations showed clear differences between the two groups of children, both in the attention they received from adults and in the nature of their activity and speech. The most encouraging aspect of the observations was that these differences between the two groups were of degree rather than kind.

The aims of the scheme were being achieved to the extent that special group children were taking part in the same activities as the main roll children, that they were found in groups of varying size and composition, and that their speech functions covered the same range as the main roll children. At the same time, the observations showed that the special group children received extra help and attention from the teachers and, in particular, the special group teacher. This is also in line with the objectives of the scheme.

Gender differences emerged in preschool activities, complexity of child activities, function of utterances, and nature of response to speech. More boys were observed in block play, outdoor play

and the sandpit, and more girls were observed in manipulative play, in family play, and in painting and drawing. Boys were more likely to be engaged in silent play, solitary or parallel, but they were also a little more likely than girls to be playing collaboratively. Boys showed a greater tendency than girls to use their speech to tell others what to do, while girls used more speech than boys in social interaction routines and, particularly, to answer questions from teachers or adults. When others spoke to them, girls responded verbally slightly more often than boys, and girls' responses were judged slightly more appropriate than those of boys.

Combining Information

In research it is very rare for a single type of measure to tell you very much about a group of children. For example, the observations showed that more special group children than main roll children were with adults during the morning. While this fact may be interesting in itself, it cannot be interpreted without further information. Is it the result of a characteristic of the child, or a result of the situation or environment in which the child is placed?

Observation of *Group Size and Composition* in the structured observation schedule can show us whether a child is usually in groups consisting of only one other child or of several children. But being in a group does not necessarily imply that the child is doing what others in the group are doing. A running record will show us what happens within that group of children. The two types of observation, one structured and carried out at regular intervals, and the other a running record of events of varying duration, can be used together to interpret the conditions for learning experienced by a child.

Nicky

The first booklet in this series opened with a description of a child who was a champion at catching flies (see *Joining In: The Summary*, page 7). That description came from a running record. Nicky was four years and five months old at the time. We will now combine

information from the structured observation of Nicky with information from the running record, and with what his teachers said about him when they were interviewed. He had been at morning kindergarten only six weeks when we observed him but he had attended afternoon kindergarten before that. It had taken Nicky a long time to settle in. When he first started at afternoon kindergarten he did not walk very well, he dribbled, his finger movements were clumsy and he cried a lot. Now, his teachers said, he was aware of the need to communicate, had begun to talk and had a longer concentration span. His confidence had grown to the point where he would often approach the special group teacher to show her what he had made – something he would never have done when he first started.

At 9.36 a.m. Nicky was with the teacher catching flies for the kindergarten's frog. He attracted the teacher's attention by saying, 'Eh, Oh!', and when the teacher asked whether he had caught a fly, Nicky nodded. At 10.00 a.m. Nicky was still engaged in catching flies but this time he was alone. He attracted the teacher's attention by saying, 'Ahh!'

At 10.21 a.m. Nicky was at morning tea with a large group of children and the teacher. The running record showed that he was upset because his drink had been taken by another child and he said, 'Ah, Ah', while trying to retrieve it. At 10.40 a.m. Nicky was with another large group of children in the family corner. The running record described how he spent some time attempting to ram his pram into a block structure. Other children kept shouting, 'Don't.' Nicky didn't say anything. At 11.10 a.m. Nicky was again with a large group of children and the teacher for music time. When the teacher asked all the children to sit on the mat, Nicky climbed into a chair, doing what he had seen other children doing earlier. At 11.30 a.m. it was mat-time and Nicky was sitting silently, responding to the teacher by waving his hands in the air.

During the course of the morning he was observed responding to an adult's instruction and learning through interaction with objects. He had some difficulty in understanding but he did not have any hesitation in mixing with other children.

Teachers can often learn more about a child by using varied sources of information rather than by making repeated observations all of the same kind.

Using the Structured Observation Schedule

There are many ways in which the schedule described in this booklet can be used for exploration by teachers and others. It can be used for your own information, for example, to find out more about individual children or about the kind of speech that accompanies particular preschool activities. However, if you intend to use it you should first practise using it and also find another person to observe with you so that you can compare your observations.

The schedule can be used to observe single variables. You may be interested in whether children respond to speech. If so, use the variable *Response to Speech*. Although the original observations were made every half hour, there is no reason why more frequent observations could not be made of a single variable which interests you. It is also possible to pick two variables, such as *Preschool Activity* and *Response to Speech*, and obtain a measure of talk to the child and response from the child associated with particular activities.

For research purposes, the schedule should only be used with appropriate training. It should not be used by an observer until that person's observations and those of another person observing the same child substantially agree on what the child is doing (often set at a level of 80 percent agreement) over a series of trials. This process of obtaining agreement between observers should become clearer if the method by which we tested the observation schedule is explained.

As reported earlier, observers found the coding scheme for *Child Activity* too complicated and inconsistencies showed up between the observers' written descriptions of a child's behaviour and their coding of that behaviour. Rather than discarding the information collected, it was decided to get two independent observers to test the schedule in order to find out exactly what had gone wrong.

Testing the Observation Schedule

The principal researcher first explained the schedule to two people who had not been part of the original study.[7] Then each studied it independently, together with the instructions. Before making observations they each walked around a kindergarten, locating and identifying all the activities listed.

Although they reached agreement of 85 percent or over on every variable tested independently, the observers felt that the variable of *Child Activity* was more difficult to code than the others.

When each variable had been tested, the observers went through the whole schedule, each observing the same child. Although it was possible for the observers to arrive at agreement at the 85 percent level over all variables and all observations, a lack of agreement still showed up from time to time on the variable of *Child Activity*.

It should be noted that a high level of inter-rater reliability does not guarantee the validity of the observations carried out by the observers since two observers trained together may make the same errors.

There are three types of error that could have caused the problems with *Child Activity*.

1. *Timing errors*: The observers could have coded the specific categories of behaviour at slightly different times and so have seen different things.
2. *Interpretation errors*: The observers could have applied the coding scheme incorrectly or have misinterpreted the behaviour observed.
3. *Instrument errors*: The classification categories and/or the coding instructions could have been ambiguous or incomplete.

Across all variables, each instance in which the coding of the two observers did not match was examined to see what kind of error, or errors, had caused it. There were examples of all three types.

Timing errors. In one observation, a mismatch arose because of a

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7. Pam Cubey and Sashi Meanger carried out the testing. Thanks are due to Cedric Croft for advice.

difference in the time of observation. This was resolved when observers synchronized their observations by first signalling to each other by nodding. (More sophisticated timing devices can be used.)

Interpretation errors. Interpretation errors made by the two people who were testing the schedule were resolved by further training in the coding scheme and clarification of the existing decision procedures.

Instrument errors. On the variable of *Group Size* there were only two mismatches but it seemed that the instructions for defining group size could have been made clearer. This has now been done.

On the variable of *Child Activity*, over which the observers often failed to agree, we examined the precise codes which the observers kept confusing and then discussed the description of the events each of the observers had written down at the time. The coding scheme was clearly at fault. It was simplified by combining categories that were consistently confused. For example, by examining the descriptions of behaviour and matching these with the code numbers given by the observers, it could be seen how difficult it was for observers to separate the original categories, *Activity and related speech*, from *Single activity and speech on a different topic*, and these, in turn, from *Doing two or more things at once and speaking*. If you look at the schedule as it is now, you will see that there is a code, *Solitary or parallel play with speech*. This combines the three original categories. In the same way a category of *Solitary or parallel play without speech* combines two other categories which were earlier separate. *Collaborative activity* remains unchanged. The data on *Child Activity* from the larger study were re-coded and the frequency tables were re-calculated to accord with the three revised categories.

The schedule reproduced in this report is the revised version. Its substance is unaltered from that used in the original study.

Conclusion

With this booklet we have completed our report on what integration is and how it operated in the preschools which were part of the scheme for mainstreaming children with educational handicaps. We have compared the behaviour of the special group with the main roll children and studied how and whether the special group children were using the preschool environment for learning. We have collected the opinions and experiences of a sample of mothers and reported what the teachers and supervisors told us about their aims and objectives for the special group children. We have described the variations in programmes and informally assessed the outcome for children of differing age and disability. While, as noted in the first booklet, which gave a summary of the study, there are ways in which the scheme could be improved, there is no doubt that the children for whom the groups were set up were benefiting from it, as were their mothers.

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Appendix

A blank form of the revised schedule is reproduced on page 59, which readers may wish to photocopy for their own use. On pages 17 and 18 there are two examples of schedules that have been filled in.

Instructions for Use of the Schedule

1. Identify the target child.
2. Write a brief description of the child's appearance (possibly the colour of hair and clothing) in order to be able to identify the child at later observations.
3. Try to be as inconspicuous as possible and do not get too near the child, even if you cannot hear the exact words spoken. Some children are very sensitive to the presence of strangers. If anyone asks what you are doing, say that you are observing children. Reassure any mothers, if necessary, that you are not assessing the child. Tell children who ask that you are writing down notes about what you see.
4. Work steadily through the schedule. Do not wait for interesting behaviour. When you have observed one child go on as quickly as possible to the next child. The order of observation is:
   (a) Longest enrolled special group child.
   (b) Matching child from the main roll.
   (c) Shortest enrolled special group child.
   (d) Matching child from the main roll.
5. Pause long enough to make sense of what you see.
6. Start filling in the form. The time taken to fill in the form is the duration of the observation.

Description of Child's Appearance:

Kindergarten/Playcentre:

Time:

Group Size and Composition	1 Alone	2 Gazing away	3 With 1 child	4 With 1 adult	5 With more than 1 adult	6 With 2-5 children	7 With large group of children	8 On mat
Preschool Activity	1 Adventure/ outdoor	2 Blocks	3 Books/ stories	4 Carpentry	5 Clay	6 Collage/ craftwork	7 Conversation	8 Cooking	9 Dough
	10 Family	11 Finger painting	12 Manipulative	13 Mat	14 Maths/ science	15 Morning tea	16 Music/ singing	17 Nature/ animals	18 Painting/ drawing
	19 Sand	20 Small toys	21 Tidying/ cleaning	22 Water	23 Withdrawal	24 Other	25 Not engaged in activity		
Child Activity	1 Solitary or parallel play without speech			2 Solitary or parallel play with speech			3 Collaborative activity with or without speech		
Child's Speech Functions	1 Silence	Intra-individual: 2 Comment	3 Vocal play	4 Problem solving	Communicative: 5 Regulates others' actions	6 Obtains objects	7 Calls attention to self or objects	8 Social interaction routine	9 Obtains information (identify/ locate)	10 Obtains information (clarify)
Response to Speech	1 Nobody spoke to child	2 Adult spoke to child	3 Another child spoke to child	4 Verbal response	5 Non-verbal response	6 No response	7 Appropriate response	8 Inappropriate response		
Child's Behaviour	1 Average	2 Happy	3 Imitating	4 Sad	5 Clinging	6 Rejecting	7 Aggressive			

Brief description of behaviour observed including any utterance

7. Put circles around numbers that are nearest the description of what you observe. More than one number may be circled for *Group Size* and *Child's Behaviour*. For *Response to Speech*, one number should be circled in each of the three sub-categories relating to who spoke, the nature of the child's response, and the appropriateness of the response. For *Child's Speech Functions*, generally only one number should be circled, but see detailed instructions below. Only one code should be circled for *Preschool Activity* and *Child Activity*.
8. Start observing at 9.00 a.m. if child has arrived. If not arrived, go on to next child. Observe missed child 5 minutes after arrival. Begin second observations at 9.30 and thereafter at 30 minute intervals. Six observations altogether. If for some reason it is impossible to carry out an observation at the proper time (e.g., if one of the children is out for a walk with a teacher), wait for the child's return and observe the child then. It is most important to observe all four children as closely together as possible for each of the six observations.
9. If the centre has a mat-time make one set of the observations during mat-time, even if this means that the time schedule is altered for these particular observations.

Write summaries of the following instructions on to a blank observation schedule alongside each code. It will help you to remember the detail and will act as a ready reference.

Group Size: A group should have one or more of the following characteristics:
(a) Shared activity.
(b) Joint attention.
(c) Proximity.

Always take the larger of two groups in which a particular child could be considered to be located. For example, if six children are sharing the activity of collage but two of these are having a personal conversation, the group size should be 6 and not 2, and the code is 7.

More than one code number can be circled.

Preschool Activity: The regular developmental activities are set out in alphabetical order. (The activities are described more fully on pages 28-32 of the report.)

Only one code number to be circled.

Child Activity: This is a measure of complexity of behaviour. The 'activity' must be a conscious activity, an intentional activity, and not an automatic or simple action, such as swinging the legs while seated. Code 1 covers solitary and parallel activities: for example, either child alone washing doll, or, in a group who are all washing dolls but each with own doll. Code 2 covers solitary and parallel activities accompanied by speech: for example, child alone but asking others to watch the doll being washed, or, in a group of children who are all washing their own dolls and holding a conversation at the same time. Code 3 covers all forms of collaborative activity, that is, activity which involves understanding the intentions and

viewpoints of others: for example, all children washing the same doll but one soaping it, another using a washcloth, and another getting a towel ready. Another example would be two or three children constructing a tower of blocks. Speech may or may not be heard at the time of observation. *Collaborative activity* entails a common purpose or goal.

Only one code number to be circled.

Child's Speech Functions: Intra-individual: the child utters the sound whether or not anyone is listening. Communicative: the child intends others to hear. Examples follow.

1 *Silence.*

Intra-individual

2 *Comment*: 'This is . . .', 'Oh', when something surprising happens.

3 *Vocal play*: Entertaining sounds or utterances.

4 *Problem solving*: 'This goes here.', 'Where's the hammer?' (child talking to self).

Communicative

5 *Regulates others' actions*: 'Come here.', 'Go away.', 'Put that there.'

6 *Obtains objects*: 'Give me . . .', 'I want . . .'.

7 *Calls attention to self or objects*: 'Look at me.', 'Look at this.', 'I've got a . . .', 'This is a . . .'.

8 *Social interaction routine/responds to teacher questions*: 'Hello', 'Goodbye' or general chit-chat (often in pretend play). Responds to questions from adults in teaching or tutoring situations.

9 *Obtains information to identify, or locate, persons or objects*: 'What's that?', 'Where's . . .?', 'Whose . . .?'

10 *Obtains information to clarify another person's utterance*: 'What did she say?'

Circle more than one number only if a child makes more than one utterance, each with a different function, for example, 'Go away', immediately followed by, 'Look at me'.

Response to Speech: Does the child respond to speech of others in any way during the course of the observation? Speech already classified according to function may or may not be a response. If it is a response, code the utterance under both variables. Three aspects of responses should be coded. Did anyone speak to child and, if so, who? (1, 2, 3) Was the response verbal or non-verbal or was there no response? (4, 5, 6) Was the response appropriate or inappropriate? (7, 8)

Circle one number for each sub-category.

Child's Behaviour: This variable refers to characteristics of behaviour and feeling states. *Initiating* refers to a display of initiative in the usual sense. Is the child trying to organize someone or something? Simply starting a conversation is insufficient unless it is the beginning of planning for an activity, e.g., a proposal to play with the trolleys, or seeking the teacher's help with something. Not 'Go away' to other children, or 'Look at me', but rather, 'Let's play.'

Circle two codes only if *Initiating* is coded, otherwise one code.

At the bottom of the form give a brief description of the behaviour observed, including the text of any utterance. Get the gist of the utterance even if you are not sure of its exact form. If the child speaks and/or is spoken to, you may find it easier to write this down first before filling in the rest of the schedule.

People Involved in the Project

Project Director: Geraldine McDonald
Assistant Project Director: Raylee Johnston
Research Assistant: Sashi Meanger
Data Manager: Sally McKenzie *Word Processing:* Barb Bishop
Adviser: Amiria Johnson
Observers: Michelle Childs, Louise Biddick, Stephanie Frost, Hilary Wilson, Betty Clark, Joanne Adam, Jane Barron, Sue Skarsholt
Advisory Committee: Elizabeth Beatson, Val Burns, Michael Cooper, Anne Fisk, Jo Kelly, Helen Stevens
Assistance with editing: Pam Kennedy
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Kindergartens used for training purposes: Newtown Kindergarten, Parnell Kindergarten, Redwood Kindergarten, Melville Kindergarten, Ranui Kindergarten, Helen Deem Kindergarten
In the Study:

Wellsford Kindergarten
Birkdale Kindergarten
Highland Park Kindergarten
Te Atatu North Kindergarten
Milford Kindergarten
Murdoch Park Kindergarten
New Lynn Kindergarten
Oranga Kindergarten
St. Christophers Kindergarten
Settlement Road Kindergarten
Homai Kindergarten
Bellmont Kindergarten
Brookfield Kindergarten
Cambridge Kindergarten
Western Heights Kindergarten
Brooklands Kindergarten
Hawera Kindergarten
Polson Park Kindergarten
Hokowhitu Kindergarten
West End Kindergarten
Rutene Road Kindergarten
Irongate Kindergarten
Brian Avenue Kindergarten
Moira Gallagher Kindergarten
Tairangi Kindergarten
Johnsonville Kindergarten
Cottle Kindergarten
Grove Street Kindergarten
Karoro Kindergarten
Hornby Kindergarten
Nuffield Kindergarten
Linwood Kindergarten
Rutland Street Kindergarten
Glenview Kindergarten
Brockville Playcentre
Richard Hudson Kindergarten
Rachael Reynolds Kindergarten
Elston Lea Kindergarten
Waverley Park Kindergarten

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